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09/990,527	11/21/2001	Walter R. Smith	MFCP.88141	3082
45809	7590	04/06/2006	EXAMINER	
SHOOK, HARDY & BACON L.L.P. (c/o MICROSOFT CORPORATION) 2555 GRAND BOULEVARD KANSAS CITY, MO 64108-2613			CHOW, CHIH CHING	
			ART UNIT	PAPER NUMBER
			2191	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,527

Applicant(s)

SMITH, WALTER R.

Examiner

Chih-Ching Chow

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>3/30/06</u> |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to amendment dated January 17, 2006.
2. Per Applicants' request, claims 9 and 10 have been amended. Claims 1-15 remain pending.

Response to Amendment

3. Applicants' amendment for Claims 9 and 10 have been entered.
4. Applicants' amendment for Claims 9 and 10 have been fully considered. respectfully by the examiner but they are not persuasive.
5. The Examiner is maintaining the 35 USC § 102 and the 35 USC § 103 Rejections. For the Applicants' convenience they are listed as following, with the amendments requested by the Applicants.

Response to Arguments

6. Applicants' arguments have been fully considered respectfully by the examiner but they are not persuasive.
7. Applicants' arguments are basically in the following points:

- Differences Between to Claimed Invention and the Cited References (REMARKS page 6, first paragraph) "O'Brien's inserted executable tag statements are completely unrelated to the removed comments. O'Brien's executable tag statements do not correspond to the removed comments, and no index or decoding file is created that maps each inserted executable tag statement to the removed comments"

Examiner's Response: In respond to the argument, as a matter of fact, it's not recited in independent claims 1, 9, 10, or 11 when removing comments, the current application needs to correlate the removing comments with the indexed file/decoding file. Also when O'Brien removes the programmer's comments, it inserts tags with instrumentation data, see O'Brien's Fig. 4, item 62, and column 12, lines 40-41, "The C parser 69a instruments the file produced by the C preprocessor 66a with instrumentation tags 62", therefore, the applicant's argument is not persuasive. As previously answered, O'Brien removes any comments/text strings that are not necessary to know by the users, but inserts instrumented

tags for debugging purposes. Therefore, independent claims 1 and 9-11 are anticipated by O'Brien's disclosure, they are not considered a novelty in the art.

- Differences Between to Claimed Invention and the Cited References (REMARKS page 6, second paragraph) "While O'Brien removes programmer comments and inserts executable tag statements, there is no disclosed or suggested correspondence between the removed comments and the inserted tag statements in O'Brien. Therefore, O'Brien does not disclose or suggest the unique tag that is recited in each of independent claims 1 and 9-11 of the subject application, because the unique tag in claims 1 and 9-11 corresponds to each removed text string."

Examiner's Response: In regard to the argument see O'Brien's column 15, lines 30-43, "Three events which are controlled by the RTOS must be tracked: **when a task is created, when a task is deleted, and when a task switch (swap) occurs.**

In order to accomplish this, a second instrumentation step (beyond application program source instrumentation) is required. Most modern commercial RTOS provide call outs which conveniently allow a user supplied software function to execute when a specific RTOS event occurs. A simple function linked into the appropriate call outs for the above three RTOS events outputs **the appropriate control tag to indicate the kind of RTOS event, and one or more data tags to uniquely identify the RTOS task(s) affected.** In a similar fashion, custom-built RTOS may be easily modified to emit the appropriate tag as well." And column 16, lines 14-16, "When a 'delete task' tag is received, any execution information (including comments for the code) preserved on the task's stack is tabulated a final time in the appropriate data base." – In O'Brien's disclosure, when removing comments regard to a certain task, it refers back to the tag number.

8. Examiner is maintaining the 35 USC § 102 and the 35 USC § 103 Rejections. For the Applicants' convenience they are listed as following, with the amendments requested by the Applicants.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 3, 7-10, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,311,327 to Stephen Caine O'Brien et al. (hereinafter "O'Brien").

CLAIM

1. A method for obtaining information regarding events to be taking place within a software program to be used by a customer on a computing device, comprising:

(a) including, for each of a number of selected events, an indicator within the software program that records the selected event, the indicator including a text string created by a software developer and descriptive of the selected event;

(b) assigning and including a unique tag corresponding to each text string;

(c) creating an index mapping each tag to the corresponding text string; and

O'Brien

In O'Brien, column 4, lines 9-12, "Data tags are always associated with a specific control tag, and they have a data field that provides information about an **event** identified by the **control tag** with which it is associated." (the selected *event identified by an indicator*). For items a, b, and c, see O'Brien, column 10, lines 49-60, "The parser 311 and the **tag** instrumenter 69 may be added as a new routine to the modified compiler 66 to **insert tag** statements at **appropriate points**.... The language-independent analyzer 321 may also be constructed as an information entry application program interface ("API"), according to an embodiment of the invention. An API is a library of **called procedures** used by an **application program**" (*in a software program*). Further, in O'Brien, column 11, lines 6-11, "the API 323 may provide a set of commands for retrieving information from the database 65 using a **tag value** as a **search key** (*mapping index*). Depending on the significance of the **tag** value, the API 323 may return a symbol name corresponding to the **tag**, a **text string**" (*a unique tag corresponding to each text string*). O'Brien teaches the concept of using a **unique tag** as an **index** key to a **corresponding text string** in a software

Art Unit: 2192

(d) removing each text string from the program prior to transferring the program to a customer.

program; the tag value can be inserted in **selected event** (*appropriate point, called procedure*).

For item d, see O'Brien, column 9, lines 44-47, "The intermediate form of the AST 312 represents elementary processing of the source code 60 and, in some embodiments, may merely entail **removing programming comments from the source code 60.**" And column 12, lines 3-5, "The C preprocessor 66a **removes information from the source code 60** (*removing each test string prior to transferring the program to a customer*) such as comments that may have been added by the source code's programmer."; -- the information can include the text string from the program; and further, in column 22, lines 15-19, "A probe, such as the probe tip 12, represents but one mechanism for detecting **tags** during a program's execution. Other detection mechanisms include **writing tag values to a file** which for **subsequent analysis** and **capturing tag values** passing during an **external function call.**" (see Fig. 1), this sentence implies that in O'Brien's art, the text string does not reside in the application program, the application program only contains the **tag values**. Therefore, there is no need to remove text string before transferring the program to a customer.

3. The method of claim 1, wherein the indicator is a function call.

For the feature of claim 1 see claim 1 rejection. O'Brien teaches "capturing **tag values** passing during an **external function call.**" (column 22, line 19). Therefore, the **indicator (tag value)** can be a **function call**.

7. The method of claim 1, further comprising including within selected indicators an identifier, the identifier identifying information unwanted by a software provider.

For the feature of claim 1 see claim 1 rejection. O'Brien's has disclosed the 'probe tip' (number 12 in Fig. 1) which is a **separate unit** from the computer, further, in column 7, lines 27-30, "After the probe chassis 20 has performed various **tabulation and data reduction functions** (*filtering out*) on the data

Art Unit: 2192

from the probe tip 12, it outputs appropriate data to the host system 40 through the local area network cable 30". The probe contains an **identifier**, which will be used to **identify certain text string (identifying information)**, the text string is not used in the application program; this also means the identifier identifying information (matching text strings) are not required (*unwanted by a software provider*) for program execution, see 35 USC 112 rejection item 8 above.

8. The method of claim 7, further comprising: filtering out, prior to transmittal of the file to the repository, selected data indicated by the identifier as unwanted information.

For the feature of claim 7 see claim 7 rejection. Claim 7 rejection covers the 'filtering out' feature. In O'Brien, column 1, lines 48-51, "As another example, each tag statement may send **tag identifying data to a disk file** (*unwanted information; not delivered in software product*). As still another example, an array can be reserved in memory, with each array element corresponding to a tag inserted in a respective location in the source code." (*repository*).

9. A computer-readable medium having computer-executable instructions for performing a method for obtaining information regarding events to be taking place within a software program to be used by a customer on a computing device, comprising:

searching for a text string within the software program created by a software developer and descriptive of a selected event;

assigning and including a unique tag corresponding to each text string found;

creating an index mapping each tag to the corresponding text string; and

removing each text string from the program.

Same as claim 1 rejection. For the unique tag corresponding to each text string, see O'Brien's column 1, lines 55-56, "an array can be reserved in memory, with **each array element corresponding to a tag** inserted in a respective location in the source code." – each tag is uniquely correspond to source code/text strings.

10. A computer system having a processor, a memory, and an operating environment, the computer system operable to execute a method for obtaining information regarding events to be taking place within a software program to

Same as claim 1 rejection.

be used by a customer on a computing device, comprising:

- searching for a text string within the software program created by a software developer and descriptive of a selected event;
- assigning and including a unique tag corresponding to each text string found;
- creating an index mapping each tag to the corresponding text string; and
- removing each text string from the program.

14. The method of claim 7, wherein the unwanted information is sensitive or personal information about the customer.

For the feature of claim 7 see claim 7 rejection. See O'Brien, column 12 lines 3-5, "The C preprocessor 66a removes information from the source code 60 such as comments that may have been added by the source code's programmer." – the information can be any information which is unrelated to the function implementation, such as sensitive or personal information about the customer.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 11-12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,311,327 by Stephen Caine O'Brien et al. (hereinafter "O'Brien"), in view of US Patent No. 5, 608, 720 by Charles H. Biegel et al. (hereinafter "Biegel").

Art Unit: 2192

CLAIM

2. The method of claim 1, further comprising:
- (a) creating, on the computing device, a file of the recorded events including the unique tag for each event;
 - (b) receiving, from the computing device, the file of the recorded events;
 - (c) processing the file, by replacing into the file, the text string corresponding to each tag within the file; and
 - (d) outputting a text string record of the events which took place within the software program, thereby providing a software provider a text record of the events taking place in the program to determine how the program may have failed.

11. A method for recording program information, by a software provider, about events to be taking place within a software program executing on a computer to be used by a customer, comprising:

- (a) including, for each of a number of selected events, an indicator within the software program that records the selected event, the indicator including a text string created by a software developer and descriptive of the

O'Brien / Biegel

For the feature of claim 1 see claim 1 rejection. For items a, b, and c see claim 1 rejection. For item d, O'Brien teaches providing text record when an error has occurred, in column 17, lines 22-26, "When an error is identified, a set of data and a control **tag** are written to indicate the **error**. The information present in the tags include an **error** identifier, the address of the block in **error** and its size (if any), the caller identifier(s) of the block's allocator and deallocator (if any), and the kind of allocator call begin attempted when the **error** was discovered."; but O'Brien does not mention the 'program may have failed' specifically. However, Biegel teaches this feature in an analogous art. In Biegel, column 28, lines 20-24, "An error identifier for an error is a **code** that is used to **decode the error** by offline tools in an output driver in the RDT (***coding and decoding***). This code is used to associate the error with a printable ASCII string.", column 48, lines 37-38, "If a **service operation fails**, the **failure** is translated into the most appropriate TL1 **error code**." It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien's disclosure of the tagging of the application program by the tagging the program failures further taught by Biegel, for the purpose of aid in system debugging (see Biegel, column 29, lines 34-35).

O'Brien teaches all aspects of claim 11 but does not mention the 'coding and decoding' (items b and c) specifically. However, Biegel teaches this feature, see claim 2 rejection (***coding and decoding***).

Art Unit: 2192

selected event;

(b) coding the text string with a unique tag corresponding to each text string;

(c) creating a decoding file mapping each unique tag to the corresponding text string; and

(d) removing each text string from the program prior to transferring the program to a customer.

12. The method of claim 11, further comprising receiving, from the customer, a file of the recorded events, the file including the unique tag for each event;

decoding the file by mapping the coded tag with the corresponding text string; and

outputting a text string record of the events which took place within the software program, thereby providing the software provider with a text record of the events taking place in the program to determine how the program may have failed.

15. The method of claim 11, wherein removing each text string from the program prior to transferring the program to a customer includes deleting each text string from the program but at least temporarily storing said each text string incident to said deleting.

For the feature of claim 11 see claim 11 rejection. For the rest of the feature of claim 12, see claim 2 rejection.

For the feature of claim 11 see claim 11 rejection. For the rest of the feature of claim 15, see claim 1 (d). Also see O'Brien's paragraph 0061, "The language-independent analyzer 321 determines a name, an identity, and appropriate reference numbers for inserted tags 62 and forwards this tagging information to the symbol database 65. The language-independent analyzer 321 receives programming context information from the C parser 69a and also stores this information in the symbol database 65 in an appropriate location for later reference." And paragraph 0087, "**Calls to an operator delete are followed by a call to the instrumented interface** (i.e., augmented-free), along with an appropriate memory management tag."

13. Claims 4-6, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,311,327 by Stephen Caine O'Brien et al. (hereinafter "O'Brien"), in view of US

Art Unit: 2192

Patent No. 5, 608, 720 by Charles H. Biegel et al. (hereinafter "Biegel"), further in view of U.S.

Patent no. 5,245,615 by Albert R. Treu (hereinafter "Treu").

CLAIM

4. The method of claim 2, further comprising:
as the program executes on the computing device, limiting the size of the file of the recorded events.

O'Brien / Biegel / Treu

For the feature of claim 2 see claim 2 rejection. O'Brien and Biegel teach all aspects of claim 4 but does not mention the 'limiting the size of the file of the recorded events' specifically. However, Treu teaches this feature in an analogous art. In Treu, column 4, lines 66-67, "In a preferred embodiment, **error log 88** has a **size** of 109 contiguous bytes."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien and Biegel's disclosure of the tagging of the application program and tagging the program failures by limiting the size of the error log taught by Treu, for the purpose of storing predetermined error log information at predetermined locations therein. (see Treu's Abstract, lines 2-3).

5. The method of claim 4, further comprising:
in response to a failure of the program on the computing device, automatically transmitting the file to a repository accessible by the software provider.

For the feature of claim 4 see claim 4 rejection. For the 'transmitting the file to a repository' part, see claim 8 rejection.

6. The method of claim 5, wherein the failure is a crash of the program.

For the feature of claim 5 see claim 5 rejection. O'Brien and Treu teach the aspects of claim 6, except they don't mention 'crash' specifically. However, Biegel teaches the concept of crash as a failure of a program. In Biegel, column 27, lines 26-28, "4. **Crash Log**--captures a snapshot of the processor state when an irrecoverable error occurs on the processor". Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien and Treu's disclosure of the tagging of the application program and tagging the program failures by tagging a crash condition taught by Biegel, for the purpose of capturing the state of

Art Unit: 2192

the processor while a crash occurred (see Biegel, column 29, line 47).

13. The method of claim 2, further comprising: deleting the file when the program closes normally, without crashing.

For the feature of claim 2 see claim 2 rejection. O'Brien and Biegel teach all aspects of claim 13 but does not mention the 'deleting the file when the program does not have a crash' specifically. However, Treu teaches this feature in an analogous art. In Treu, column 8 last line to column line 21, "**step 176 determines if an error or failure (crash)** occurred during the test. If not, step 178 then sees if any log entry has been saved by step 174, and if one has, step 180 informs the user that a temporary error may have occurred. ... If step 176 results in a positive determination, step 184 then compares the cause of failure with the log information saved in step 174. If they compare, step 188 **deletes the resource** (e.g. by deleting a block of memory from which the error arose) and informs the OS. Step 190 then deletes the log entry corresponding to such resource, builds an OS information log (error log status byte- bit 6) indicating the deletion and branches to step 182."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien and Biegel's disclosure of the tagging of the application program and tagging the program failures by removing unnecessary error log taught by Treu, for the purpose of saving memory space for storing predetermined error log information at predetermined locations therein. (see Treu's Abstract, lines 2-3).

Conclusion

The following summarizes the status of the claims:

35 USC § 102 rejection: Claims 1, 3, 7-10, and 14

35 USC § 103 rejection: Claim 2, 4-6, 11-13, and 15

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature of relating to the status of this application should be directed to the **TC2100 Group receptionist: 571-272-2100.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow

Examiner

Art Unit 2192

March 31, 2006

C.C.



**ANTONY NGUYEN-BA
PRIMARY EXAMINER**